

AMENDMENTS TO THE CLAIMS

1. (Original) An instrument mount apparatus for positioning a surgical instrument comprising a mount body having a base portion moveably coupled at a first articulating joint and a side portion moveably coupled at a second articulating joint, and an actuator operatively connected to said first and second articulating joints, said first and second articulating joints being freely moveable when said actuator is in an unlocked position, wherein said first and second articulating joints are compressed each into a substantially immovable condition when said actuator is placed in a locked position, and wherein said first articulating joint is at an angle relative to said second articulating joint.

2. (Original) The instrument mount apparatus of claim 1 wherein said angle is less than about 120 degrees.

Claims 3 - 4. (Canceled)

5. (Original) The instrument mount apparatus of claim 1, wherein said actuator comprises a base post assembled thorough said base portion and said mount body and interconnected at a first end to a cam operatively interfacing a contact surface on said mount body, and a tie pin having a slotted portion which receives said base post, wherein, upon operation of said cam, said base post is drawn toward said cam and said locked position and a ramped portion of said base post drives said tie pin towards said locked position.

6. (Original) The instrument mount apparatus of claim 5, wherein said first articulating joint comprises a ball and socket joint and said base post further comprises a flange at a second end opposite said first end, wherein movement of said cam to said locked position draws said flange against said base portion thereby locking said ball and socket joint.

7. (Original) The instrument mount apparatus of claim 5, wherein said second articulating joint comprises a rotational joint including a frustoconical member extending from said side portion and a cooperating frustoconical cavity within said mount body.

8. (Original) The instrument mount apparatus of claim 7, further including a grip member, said side portion and said grip member positioned to form an opening therebetween for receiving a surgical instrument.

9. (Original) The instrument mount apparatus of claim 8, wherein said tie pin is connected, at a first end, to said grip member.

10. (Original) The instrument mount apparatus of claim 9, wherein said tie pin comprises a pair of flexible prongs which interconnect at said first end with said grip member.

Claim 11. (Canceled)

12. (Original) The instrument mount apparatus of claim 9, wherein said tie pin is releasably connected to a release button at a second end of said tie pin, wherein pressing of said release button extends said tie pin and grip member to allow removal of said grip member to exchange surgical instruments.

13. (Original) The instrument mount apparatus of claim 1, wherein said first articulating joint comprises a ball and socket joint.

Claim 14. (Canceled)

15. (Original) The instrument mount apparatus of claim 1, wherein said second articulating joint comprises a ball and socket joint.

16. (Original) The instrument mount apparatus of claim 1, wherein said second articulating joint comprises a rotational joint.

Claims 17-68. (Canceled)

69. (Original) An apparatus for stabilizing a localized portion of a beating heart, comprising:

a substantially rigid base member having at least one surface adapted to contact the surface of the heart, a post having a first end moveably coupled to said base member and a second end having a ball-shaped member extending therefrom.

70. (Original) The apparatus of claim 69, further comprising a delivery stem having a proximal end and a distal end, said distal end having a socket operably engaged with said ball-shaped member.

71. (Original) The apparatus of claim 69, wherein said delivery stem is substantially rigid.

Claims 72-76 (Canceled)

77. (Original) An apparatus for stabilizing a localized portion of a beating heart, comprising:
a base member having at least one surface adapted to contact the surface of the heart, a link member pivotably coupled to said base member at a predetermined pivot point, said link member having a first link end spaced a distance away from said pivot point; and
a post having a first post end attached to said first link end and a second post end having at least a ball shaped member extending therefrom.

Claims 78-83 (Canceled)

84. (New) A system for use in operating on a heart through an incision in a patient, said system comprising:

a retractor including a drive mechanism and first and second retractor blades adapted to engage opposite sides of the incision, at least one of said first and second retractor blades being drivable by said drive mechanism, relative to the other of said first and second retractor blades, to spread apart an opening formed by the incision; and

an instrument mount assembly mountable to a portion of at least one of said first and second retractor blades, adapted to receive a surgical instrument, and adapted to assume at least one locked configuration fixing said surgical instrument in an orientation with respect to said instrument mount assembly and fixing said instrument mount assembly with respect to said retractor, and at least one unlocked configuration permitting repositioning of said surgical instrument with respect to said instrument mount assembly.

85. (New) The system of claim 84, wherein said surgical instrument comprises a stabilizer, said system further comprising said stabilizer mounted to said retractor via said instrument mount assembly.

86. (New) The system of claim 84, wherein said instrument mount assembly is further adapted to assume an additional locked configuration fixing said instrument mount assembly to said retractor while allowing positioning of said surgical instrument with respect to said instrument mount assembly.

87. (New) The system of claim 84, wherein said instrument mount assembly is further adapted to assume an additional unlocked configuration in which less than all degrees of freedom provided by said instrument mount assembly remain free to move.

88. (New) The system of claim 84, wherein said instrument mount assembly is adapted to assume a partially-locked configuration, wherein said surgical instrument may still be moved with respect to said retractor under frictional resistance.

89. (New) The system of claim 84, wherein said instrument mount assembly comprises a quick-release mechanism for releasing and interchanging surgical instruments held by said instrument mount assembly.

90. (New) The system of claim 89, wherein said quick-release mechanism comprises a tie-pin connected to a grip member having a release mechanism, said release mechanism being releasably connected to said tie-pin, wherein actuation of said release mechanism releases said tie pin from said grip member.

91. (New) The system of claim 90, wherein said release mechanism comprises a release button, and actuation of said release mechanism comprises pressing said release button.

92. (New) The system of claim 84, wherein at least one of said at least one unlocked configurations permits repositioning of said instrument mount assembly on said retractor.

93. (New) The system of claim 92, wherein, when in said unlocked configuration permitting repositioning of said instrument mount assembly on said retractor, said instrument mount assembly is slidably repositionable along at least one of said retractor blades.

94. (New) The system of claim 93, wherein said first and second retractor blades are each provided with a rail along which said instrument mount assembly may be slid when in said unlocked configuration permitting repositioning of said instrument mount assembly on said retractor.

95. (New) The system of claim 84, wherein at least one of said first and second retractor blades comprises at least one open slot for receiving and securing a suture therein.

96. (New) The system of claim 93, wherein said at least one of said first and second retractor blades along which said instrument mount assembly may be slidably repositioned comprises at least one open slot for receiving and securing a suture therein, and wherein said instrument mount assembly may be slidably passed over said at least one open slot during said repositioning even when said at least one slot secures a suture therein.

97. (New) The system of claim 84, wherein said instrument mount assembly, when in said unlocked configuration permitting repositioning of said surgical instrument with respect to said instrument mount assembly, allows repositioning said surgical instrument about three degrees of freedom.

98. (New) The system of claim 97, wherein said instrument mount assembly, when in said unlocked configuration permitting repositioning of said surgical instrument with respect to said instrument mount assembly, allows translation of said surgical instrument with respect to said instrument mount assembly.

99. (New) The system of claim 84, wherein, when in one of said unlocked configurations, said instrument mount assembly is fixed with respect to said retractor, while permitting repositioning of said surgical instrument about multiple degrees of freedom with respect to said instrument mount assembly.

100. (New) The system of claim 99, wherein, when in one of said unlocked configurations, said instrument mount assembly is fixed with respect to said retractor, while permitting translation of said surgical instrument with respect to said instrument mount assembly.

101. (New) An instrument mount apparatus for positioning a surgical instrument, said apparatus comprising:

a grip member configured to lock to and release from a stable support;

at least one joint member for movably connecting the surgical instrument to the grip member;

and

a locking mechanism, wherein said locking mechanism is actuatable to both lock said grip member to the stable support and lock an orientation of the surgical instrument with respect to said grip member.

102. (New) The apparatus of claim 101, wherein the stable support is a retractor.

103. (New) The apparatus of claim 101, wherein said grip member is adapted to attach to the stable support and remain slidable with respect thereto, prior to locking said grip member.

104. (New) The apparatus of claim 101, wherein said at least one joint member comprises a ball joint.

105. (New) The apparatus of claim 101, wherein said at least one joint member comprises a rotational joint.

106. (New) The apparatus of claim 101, wherein the surgical instrument comprises a stabilizer, said apparatus further comprising said stabilizer linked to said at least one joint member.

107. (New) The apparatus of claim 106, wherein said stabilizer comprises a plurality of interconnecting links, one end link of said plurality of interconnecting links articulating with at least one of said at least one joint members, and another end link of said plurality of links articulating with a stabilizer foot adapted to engage the surface of the heart.

108. (New) The apparatus of claim 107, further comprising a cable passing through said interconnecting links and connected with said locking mechanism, wherein said actuation of said locking mechanism applies tension to said cable, locking said interconnecting links in a fixed orientation.

109. (New) A method for stabilizing a portion of a patient's heart, said method comprising the steps of:

providing a stabilizer movably mounted to an instrument mount assembly, said instrument mount assembly being mounted on a stable support;

manipulating the stabilizer to apply a stabilizing force to a surface of the heart;

fixing a position of said instrument mount assembly with respect to the stable support; and

fixing a position of said stabilizer, applying the stabilizing force, with respect to said instrument mount assembly.

110. (New) The method of claim 109, wherein the stable support is a retractor, said method further comprising grossly positioning said stabilizer by sliding said instrument mount assembly with respect to said retractor.

111. (New) The method of claim 109, wherein said fixing a position of said instrument mount assembly is carried out prior to said manipulating the stabilizer.

112. (New) The method of claim 109, further comprising placing at least one articulating joint of said instrument mount assembly in an intermediate position, prior to said fixing a position of said stabilizer, wherein in said intermediate position, said at least one articulating joint may still be moved, under greater resistance than when in a free state, allowing continued manipulation of said stabilizer.